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EXAMINER	
JARRETT, RYAN A	

ART UNIT	PAPER NUMBER
2125	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/672,527	AHMED, OSMAN	
	Examiner	Art Unit	
	Ryan A. Jarrett	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5-12 and 21-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-12 and 21-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 January 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 2, 5-12, and 21-36 and pending in the application and are presented below for examination.

Priority

2. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 120 is acknowledged. This application is a voluntary "Divisional" of U.S. Patent Application No. 10/353,110, filed 01/28/2003.

3. It is noted that this application appears to claim subject matter disclosed in prior Application No. 60/352,452, filed 01/28/2002. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See 37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, 121, or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference to the prior application must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where

applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge under 37 CFR 1.17(t) are not required. Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, 6-9, 11, 21-24 are rejected under 35 U.S.C. 102(b) as being anticipated by G. Asada, M. Dong, T.S. Lin, F. Newberg, G. Pottie, W.J. Kaiser, and H.O. Marcy. "Wireless Integrated Network Sensors: Low Power Systems on a Chip". *Proceedings of the 1998 European Solid State Circuits Conference*, hereinafter referred to as "Asada et al.".

Asada et al. discloses:

1. An apparatus for use in a building automation system, the building automation system (e.g., Section 1: "WINS condition based maintenance devices will equip powerplants, appliances, vehicles, and energy systems for enhancements in reliability, reductions in energy usage, and improvements in quality of service.") **including one or more devices** (e.g., Fig. 1: "wireless integrated network sensor") **that are operable to generate control outputs based on set point information and process value information from one or more sensors** (EN: *Intended use/functional limitation of the claimed "device", see below*)**, the building automation system further including one or more actuators** (e.g., Section 1: "actuator systems") **operable to perform an operation responsive to at least some of the control outputs** (EN: *Intended use/functional limitation of the claimed "actuator"*)**, the apparatus comprising:**

at least one microlectromechanical (MEMs) sensor device (e.g., Fig. 1: "sensor") **operable to generate a process value;**

a processing circuit operable to convert the process value to an output digital signal (e.g., Fig. 1: "ADC", "control") **configured to be communicated to another element of the building automation system** (EN: *Intended use of the claimed "output digital signal"*)**; and**

wherein the at least one MEMs sensor device and the processing circuit are integrated onto a first substrate (e.g., Section 4: "This sensor-substrate "sensorstrate" is then a platform for support of interface, signal processing, and communication circuits");

wherein the processing circuit (e.g., Fig. 1: "control") **is further operable to generate a first control output based on at least one set point**

and the process value obtained from the at least one MEMs sensor device, and wherein the output digital signal is representative of the first control output (EN: *Apparatus claims must be structurally distinguishable from the prior art. This is an intended use/functional limitation of the "processing circuit". The prior art "processing circuit" of Asada et al. is capable of performing this intended use/function, if programmed to do so. Applicant has not positively recited any computer program or software performing the function.*).

2. **The apparatus of claim 1 wherein the processing circuit includes a microelectronics A/D converter, the microelectronics A/D converter operable to receive the process value from the at least one MEMs sensor device and generate a digital sensor signal therefrom** (e.g., Fig. 1: "ADC").

6. **The apparatus of claim 1 further comprising a battery secured to the first substrate** (e.g., Section 3: "sensor nodes powered by compact battery cells").

7. **The apparatus of claim 1 wherein the first substrate is a semiconductor substrate** (e.g., Section 4: "ceramic substrate").

8. **The apparatus of claim 6 wherein the battery further comprises a lithium ion battery layer** (e.g., Section 3: "Li coin cells").

9. **The apparatus of claim 8 further comprising a power management circuit operably coupled to the lithium battery layer** (e.g., Section 2: "low power sensor interface and signal processing architecture and circuits enable continuous low power monitoring").

11. **The apparatus of claim 1 further comprising an RF communication circuit operably coupled to the processing circuit** (e.g., Fig. 1: "wireless network interface").

21. **An apparatus for use in a building automation system, the building automation system** (e.g., Section 1: "WINS condition based maintenance devices will equip powerplants, appliances, vehicles, and energy systems for enhancements in reliability, reductions in energy usage, and improvements in quality of service.") **including one or more devices** (e.g., Fig. 1: "wireless

integrated network sensor") **that are operable to generate a control output based on set point information and process value information from one or more sensors** (EN: *Intended use/functional limitation of the claimed "device", see below*), **the apparatus comprising:**

at least one microelectromechanical (MEMs) sensor device operable to generate a process value (e.g., Fig. 1: "sensor");

a processing circuit operably connected to the at least one MEMs sensor device to receive the process value therefrom, the processing circuit operable to convert the process value to an output digital signal (e.g., Fig. 1: "ADC", "control") **configured to be communicated to another element of the building automation system** (EN: *Intended use of the claimed "output digital signal"*);

a battery operably connected to provide power to at least the processing circuit (e.g., Section 3: "sensor nodes powered by compact battery cells"); **and**

wherein the at least one MEMs sensor device and the processing circuit are integrated onto a first substrate (e.g., Section 4: "This sensor-substrate "sensorstrate" is then a platform for support of interface, signal processing, and communication circuits").

22. The apparatus of claim 21 wherein the fist substrate is a semiconductor substrate (e.g., Section 4: "ceramic substrate").

23. The apparatus of claim 22 wherein the battery further comprises a lithium ion battery (e.g., Section 3: "Li coin cells").

24. The apparatus of claim 23 further comprising a power management circuit operably coupled to the lithium ion battery layer (e.g., Section 2: "low power sensor interface and signal processing architecture and circuits enable continuous low power monitoring").

6. In anticipation of Applicant amending the claims to incorporate the functional limitations as software tangibly embodied on a computer readable medium, the claims are accordingly rejected as follows:

7. Claims 1, 2, 5-7, 11, 12, 21, 22, and 26-36 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 00/54237 to Graviton, Inc. ("Graviton"), supplied by the applicant. Graviton discloses:

1. An apparatus for use in a building automation system comprising:

at least one microlectromechanical (MEMs) sensor device operable to generate a process value device (e.g., Fig. 4 #52: "CANTILEVER CHIP", pg. 18 lines 16-17: "The various sensors 52, 100 and actuators 92 may be implemented through various microelectromechanical devices, also known as MEMS.");

a processing circuit operable to convert the process value to an output digital signal (e.g., Fig. 4 #56: "ADC", Fig. 4 #60: "PROCESSOR") **configured to be communicated to another element of the building automation system** (e.g., pg. 6 lines 19-29: "The actuator commands may be received via...another sensor assembly"); **and**

wherein the at least one MEMs sensor device and the processing circuit are integrated onto a first substrate (e.g., pg. 15 line 31 – pg. 16 line 3: "The system preferably includes a single chip including both the sensor, required logic components or processing components, e.g., microprocessor, and a wireless transmission component, e.g., radio frequency generator, all included within a single chip. By integrating the sensing, processing (optional memory), and transmission functionalities, the device may be made compact and robust."); **and**

wherein the processing circuit (e.g., Fig. 4 #60: "PROCESSOR") **is further operable to generate a first control output** (e.g., pg. 6 lines 19-29: "The actuator commands may be received via...another sensor assembly", pg. 27 lines 16-17: "Such control may be effected at a purely local level, such as

through the action of the processor 60 itself") **based on at least one set point and the process value obtained from the at least one MEMs sensor device** (e.g., pg. 18 lines 11-15: "the use of humidity and temperature sensors within the system by permitting correction of those effects", EN: *Correcting a temperature effect implies correcting a temperature with respect to a setpoint,* pg. 19 lines 22-23: "For example, a switch actuated by the presence of a...temperature change", EN: *Implies temperature change with respect to a setpoint,* pg. 27 lines 12-16: For example, the sensing of ingredients detects a situation requiring action to ensure that the final products conforms to the specifications, then a feedback or closed loop action may be taken so as to change aspects of the ingredients or the recipe or method of treatment of those ingredients in the process.", EN: *The "specifications" correlate to the claimed "setpoint",* pg. 27 lines 23-25: "In yet another aspect, when a contaminant or other process parameter is detected to be out of specification, an alert or alarm condition may be generated.", EN: *The "specifications" correlate to the claimed "setpoint",* pg. 29 lines 8-13: "process control...error conditions", EN: *An "error condition" is a deviation of a process control value from a setpoint.*), **and wherein the output digital signal is representative of the first control output** (e.g., pg. 6 lines 19-29: "The actuator commands may be received via...another sensor assembly").

2. The apparatus of claim 1 wherein the processing circuit includes a microelectronics A/D converter (e.g., Fig. 4 #56: "ADC"), **the microelectronics A/D converter operable to receive the process value from the at least one MEMs sensor device and generate a digital sensor signal therefrom** (e.g., pg. 4 lines 15-24, pg. 15 lines 21-30).

5. The apparatus of claim 1 wherein the at least one MEMs sensor device includes a plurality of MEMs sensor devices (e.g., pg. 15 lines 14-16).

6. The apparatus of claim 1 further comprising a battery (e.g., pg. 15 lines 14-21: "battery") **secured to the first substrate** (pg. 15 line 31 – pg. 16 line 3: "the device may be made compact" EN: *The device is compact, so the battery is inherently "secured" to the substrate. If the battery is not "secured" to the*

substrate, either directly or indirectly via some intermediary component, then where is it?).

7. The apparatus of claim 1 wherein the first substrate is a semiconductor substrate (e.g., pg. 15 line 31 – pg. 16 line 3).

11. The apparatus of claim 1 further comprising an RF communication circuit operably coupled to the processing circuit (e.g., pg. 15 line 31 – pg. 16 line 3: "radio frequency generator").

12. The apparatus of claim 1 further comprising an EEPROM operably coupled to the processing circuit (e.g., pg. 4 line 31 – pg. 5 line 2: "In the preferred embodiment, the sensor assembly containing the digital sensor includes a processor. Such a processor may comprise a microprocessor and associated components including memory (RAM, ROM, mass storage, Flash, optical memory, Biomemory, etc.)", EN: *Flash memory is a type of electronically erasable programmable non-volatile memory.*).

21. An apparatus for use in a building automation system, the building automation system including one or more devices that are operable to generate a control output based on set point information and process value information from one or more sensors, the apparatus comprising:

at least one microelectromechanical (MEMs) sensor device operable to generate a process value device (e.g., Fig. 4 #52: "CANTILEVER CHIP", pg. 18 lines 16-17: "The various sensors 52, 100 and actuators 92 may be implemented through various microelectromechanical devices, also known as MEMS.");

a processing circuit operably connected to the at least one MEMs sensor device to receive the process value therefrom (e.g., Fig. 4 #56: "ADC", Fig. 4 #60: "PROCESSOR"), **the processing circuit operable to convert the process value to an output digital signal** (e.g., pg. 4 lines 15-24, pg. 15 lines 21-30) **configured to be communicated to another element of the building automation system** (e.g., pg. 6 lines 19-29: "The actuator commands may be received via...another sensor assembly");

a battery operably connected to provide power to at least the processing circuit (e.g., pg. 15 lines 14-21: "battery"); **and wherein the at least one MEMs sensor device and the processing circuit are integrated onto a first substrate** (e.g., pg. 15 line 31 – pg. 16 line 3: "The system preferably includes a single chip including both the sensor, required logic components or processing components, e.g., microprocessor, and a wireless transmission component, e.g., radio frequency generator, all included within a single chip. By integrating the sensing, processing (optional memory), and transmission functionalities, the device may be made compact and robust."); **and wherein the battery is secured to the first substrate** (pg. 15 line 31 – pg. 16 line 3: "the device may be made compact" EN: *The device is compact, so the battery is inherently "secured" to the substrate. If the battery is not "secured" to the substrate, either directly or indirectly via some intermediary component, then where is it?*).

22. The apparatus of claim 21 wherein the fist substrate is a semiconductor substrate (e.g., pg. 15 line 31 – pg. 16 line 3).

26. An apparatus for use in a building automation system, the building automation system including one or more devices (e.g., Fig. 4 #50: "SENSOR ASSEMEBLY", Fig. 4 #60: "PROCESSOR") **that are operable to generate a control output** (e.g., pg. 6 lines 19-29: "The actuator commands may be received via...another sensor assembly", pg. 27 lines 16-17: "Such control may be effected at a purely local level, such as through the action of the processor 60 itself") **based on set point information and process value information from one or more sensors** (e.g., pg. 18 lines 11-15: "the use of humidity and temperature sensors within the system by permitting correction of those effects", EN: *Correcting a temperature effect implies correcting a temperature with respect to a setpoint,* pg. 19 lines 22-23: "For example, a switch actuated by the presence of a...temperature change", EN: *Implies temperature change with respect to a setpoint,* pg. 27 lines 12-16: For example, the sensing of ingredients detects a situation requiring action to ensure that the final products

conforms to the specifications, then a feedback or closed loop action may be taken so as to change aspects of the ingredients or the recipe or method of treatment of those ingredients in the process.", EN: *The "specifications" correlate to the claimed "setpoint",* pg. 27 lines 23-25: "In yet another aspect, when a contaminant or other process parameter is detected to be out of specification, an alert or alarm condition may be generated.", EN: *The "specifications" correlate to the claimed "setpoint",* pg. 29 lines 8-13: "process control...error conditions", EN: *An "error condition" is a deviation of a process control value from a setpoint.*), **the apparatus comprising:**

at least one microelectromechanical (MEMs) sensor device operable to generate a process value (e.g., Fig. 4 #52: "CANTILEVER CHIP", pg. 18 lines 16-17: "The various sensors 52, 100 and actuators 92 may be implemented through various microelectromechanical devices, also known as MEMS.");

a processing circuit (e.g., Fig. 4 #56: "ADC", Fig. 4 #60: "PROCESSOR") **operably connected to the at least one MEMS sensor device to receive the process value therefrom, the processing circuit operable to convert the process value to an output digital signal** (e.g., pg. 4 lines 15-24, pg. 15 lines 21-30) **configured to be communicated to another element of the building automation system** (e.g., pg. 6 lines 19-29: "The actuator commands may be received via...another sensor assembly");

a programmable non-volatile memory (e.g., pg. 4 line 31 – pg. 5 line 2: "In the preferred embodiment, the sensor assembly containing the digital sensor includes a processor. Such a processor may comprise a microprocessor and associated components including memory (RAM, ROM, mass storage, Flash, optical memory, Biomemory, etc.)", EN: *Flash memory is a type of programmable non-volatile memory.*), **operably coupled to the processing circuit and supported by the first substrate** (e.g., pg. 15 line 31 – pg. 16 line 3: "The system preferably includes a single chip including both the sensor, required logic components or processing components, e.g., microprocessor, and a wireless transmission component, e.g., radio frequency generator, all included within a

single chip. By integrating the sensing, processing (optional memory), and transmission functionalities, the device may be made compact and robust.", EN: *The system preferably includes a single chip including both the processing components and memory, which, as disclosed at pg. 5 line 1 of Graviton, can be a Flash memory.*)**; and**

wherein the at least one MEMS sensor device and the processing circuit are integrated onto a first substrate (e.g., pg. 15 line 31 – pg. 16 line 3: "The system preferably includes a single chip including both the sensor, required logic components or processing components, e.g., microprocessor, and a wireless transmission component, e.g., radio frequency generator, all included within a single chip. By integrating the sensing, processing (optional memory), and transmission functionalities, the device may be made compact and robust.").

27. The apparatus of claim 26, wherein the programmable non-volatile memory comprises an EEPROM (e.g., pg. 4 line 31 – pg. 5 line 2: "In the preferred embodiment, the sensor assembly containing the digital sensor includes a processor. Such a processor may comprise a microprocessor and associated components including memory (RAM, ROM, mass storage, Flash, optical memory, Biomemory, etc.)", EN: *Flash memory is a type of electronically erasable programmable non-volatile memory.*) **configured to store information generated by an external device selecting less than all of the available functions of the apparatus to be enabled** (e.g., pg. 16 lines 24-29: "Memory may be utilized...to store program information which achieves the functionality described herein.", pg. 24 lines 9-13: "intended function of the device", EN: *It is further noted that apparatus claims must be structurally distinguishable from the prior art. This is an intended use/functional limitation of the claimed "memory". The prior art "memory" of Graviton is capable of storing infinitely many types of information, including configuration information generated by an external device.*).

28. The apparatus of claim 26, wherein the programmable non-volatile memory is further operable to store configuration information relating to

the apparatus (e.g., pg. 16 lines 24-29: "Memory may be utilized...to store program information which achieves the functionality described herein.", EN: *It is further noted that apparatus claims must be structurally distinguishable from the prior art. This is an intended use/functional limitation of the "memory". The prior art "memory" of Graviton is capable of storing infinitely many types of information, including configuration information.*).

29. The apparatus of claim 28, wherein the configuration information includes identification information for the apparatus (e.g., pg. 24 lines 9-13: "identification number", EN: *It is further noted that apparatus claims must be structurally distinguishable from the prior art. This is an intended use/functional limitation of the "memory". The prior art "memory" of Graviton is capable of storing infinitely many types of information, including identification information.*).

30. The apparatus of claim 29, wherein the configuration information includes a network address corresponding to the apparatus (e.g., pg. 24 lines 9-13: "address", EN: *It is further noted that apparatus claims must be structurally distinguishable from the prior art. This is an intended use/functional limitation of the "memory". The prior art "memory" of Graviton is capable of storing infinitely many types of information, including network address information.*).

31. The apparatus of claim 28, wherein the configuration information includes function enabling information, the function identifying information identifying as enabled less than all of the possible sensing functions available to be enabled on the sensor (e.g., pg. 16 lines 24-29: "Memory may be utilized...to store program information which achieves the functionality described herein.", pg. 24 lines 9-13: "intended function of the device", EN: *It is further noted that apparatus claims must be structurally distinguishable from the prior art. This is an intended use/functional limitation of the claimed "memory". The prior art "memory" of Graviton is capable of storing infinitely many types of information, including configuration information generated by an external device. Applicant has not positively recited a memory storing configuration information.*).

32. The apparatus of claim 28, wherein the configuration information includes system RF communication parameters (e.g., pg. 13 line 24 – pg. 14 line 4, pg. 16 lines 24-29: "Memory may be utilized...to store program information which achieves the functionality described herein.", EN: *It is further noted that apparatus claims must be structurally distinguishable from the prior art. This is an intended use/functional limitation of the "memory". The prior art "memory" of Graviton is capable of storing infinitely many types of information, including RF communication parameters.*).

33. The apparatus of claim 27, wherein the EEPROM is further operable to store configuration information relating to the apparatus (e.g., pg. 16 lines 24-29: "Memory may be utilized...to store program information which achieves the functionality described herein.", EN: *It is further noted that apparatus claims must be structurally distinguishable from the prior art. This is an intended use/functional limitation of the "memory". The prior art "memory" of Graviton is capable of storing infinitely many types of information, including configuration information.*).

34. The apparatus of claim 33, wherein the configuration information includes identification information for the apparatus (e.g., pg. 24 lines 9-13: "identification number", EN: *It is further noted that apparatus claims must be structurally distinguishable from the prior art. This is an intended use/functional limitation of the "memory". The prior art "memory" of Graviton is capable of storing infinitely many types of information, including identification information.*).

35. The apparatus of claim 33, wherein the configuration information includes function enabling information, the function enabling information identifying as enabled less than all of the possible sensing functions available to be enabled on the sensor (e.g., pg. 16 lines 24-29: "Memory may be utilized...to store program information which achieves the functionality described herein.", pg. 24 lines 9-13: "intended function of the device", EN: *It is further noted that apparatus claims must be structurally distinguishable from the prior art. This is an intended use/functional limitation of the claimed "memory".*

The prior art "memory" of Graviton is capable of storing infinitely many types of information, including configuration information generated by an external device. Applicant has not positively recited a memory storing configuration information.).

36. The apparatus of claim 27, wherein the EEPROM is integrated on to the first substrate (e.g., pg. 4 line 31 – pg. 5 line 2, pg. 15 line 31 – pg. 16 line 3: "The system preferably includes a single chip including both the sensor, required logic components or processing components, e.g., microprocessor, and a wireless transmission component, e.g., radio frequency generator, all included within a single chip. By integrating the sensing, processing (optional memory), and transmission functionalities, the device may be made compact and robust.", EN: *The system preferably includes a single chip including both the processing components and memory, which, as disclosed at pg. 5 line 1 of Graviton, can be a Flash memory, i.e., electronically erasable programmable memory.*).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 8-10 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graviton as applied to claim 1 above, and further in view of Yamazaki et al. US 2001/0033963.

Graviton does not explicitly disclose that the battery is a lithium ion battery (claims 8, 23) coupled to a power management circuit (claims 9, 24), and disposed between a first and second substrate (claims 10, 25).

However, Yamazaki et al. discloses a layered substrate with a lithium ion battery (e.g., Fig. 1 #16, 18, 20) secured and disposed between a first and

second substrate (e.g., [0060], Fig. 1 #12, 14, 24, 26, 28), and coupled to a power management circuit (e.g., [0034]: "charging circuit").

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Graviton with Yamazaki et al. since Yamazaki et al. teaches that sheet batteries can be used to reduce the size and thickness of a compact electronic device (e.g., [0007]), and since power for parts on the substrates can be directly supplied from the battery of the layered substrate (e.g., [0009]), and since wiring can be simplified with sheet batteries (e.g., [0009]), and since a power management circuit means that sheet batteries can be reused (e.g., [0034]), and since disposing a sheet battery between a noise source substrate and a substrate from which one desires to prevent the effects of noise enables little noise effects to be provided without using an electromagnetic shielding plate (e.g., [0060]).

10. Claims 8, 9, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graviton as applied to claims 6 and 22 above, and further in view of Asada et al.

Graviton does not explicitly disclose that the battery is a lithium ion battery (claims 8, 23), further comprising a power management circuit operably coupled to the lithium ion battery layer (claims 9, 24).

Asada et al. discloses a MEMS sensor device for use in a building automation system comprising a lithium ion battery (e.g., Section 3: "Li coin cells"), further comprising a power management circuit operably coupled to the lithium ion battery layer (e.g., Section 2: "low power sensor interface and signal processing architecture and circuits enable continuous low power monitoring").

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Graviton with Asada et al. since lithium ion batteries have a high relative storage capacity and since Asada teaches that they are compact (Section 3), and since power management circuits conserve energy and cost, and prolong battery life.

Drawings

11. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 270, 272, 274, 276, 278, and 280 on pg. 17, "system 100" on pg. 6 and pg. 17, "output 258" on pg. 15, "circuit 280" on pg. 17, "circuit 1260" on pg. 33, "1010" on pg. 51. These page numbers are in reference to Application No. 10/353,110. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

12. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "600" in Fig. 6. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

13. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "200" and "202" have both been seemingly used to designate the hub module. Clarification is required. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

14. The disclosure is objected to because of the following informalities. The following page numbers are in reference to Application No. 10/353,110.

On pg. 11 line 16, "110" should be changed to "204".

On pg. 15 line 1, "value" should be changed to "valve".

On pg. 17 2nd to last line, "106" should be changed to "108".

On pg. 18 lines 10 and 12, "116" should be changed to "108".

On pg. 20 line 3, it appears that "274" should be changed to "204".

On pg. 20 last line, "274" should be changed to "202".

On pg. 26 line 10, "302" should be changed to "304".

On pg. 26 line 13, "304" should be changed to "302".

On pg. 31 lines 5 and 8, "620" should be changed to "630".

On pg. 34 line 4, "Fig. 6" should be changed to "Fig. 12A".

On pg. 35 line 19, "provide" should be changed to "provides".

On pg. 40 line 2, "cause" should be changed to "caused".

On pg. 44 line 19, "730" should be changed to "630".

On pg. 45 lines 1 and 3, "730" should be changed to "630".

On pg. 45 line 8, it appears that "550" should be changed to "1250" and "Figs. 12a and 12b" should be changed to "Fig. 12b".

On pg. 45 line 13, "830" should be changed to "632".

On pg. 47 line 2, "815a" should be changed to "815b".

On pg. 47 line 2, "817" should be changed to "818".

On pg. 47 line 9, "818" should be changed to "817".

On pg. 47 line 13, "815b" should be changed to "815a".

On pg. 47 line 14, both instances of "818" should be changed to "817".

On pg. 48 line 2, it appears that "exhaust" should be changed to "supply".

On pg. 48 line 3, it appears that "624" should be changed to "634".

On pg. 48 line 12, it appears that "120" should be changed to "1250" and "Figs. 12a and 12b" should be changed to "Fig. 12b".

On pg. 48 line 13, "an processing" should be changed to "a processing".

On pg. 50 line 14, "632" should be changed to "630".

On pg. 50 line 14, "8b" should be changed to "7b".

On pg. 51 line 5, it appears that "1200" should be changed to "1250" and "Figs. 12a and 12b" should be changed to "Fig. 12b".

On pg. 51 line 7, "an processing" should be changed to "a processing".

On pg. 53 line 16, it appears that "actuator" should be changed to "gas concentration". There is no antecedent basis for an actuator output signal.

On pg. 54 line 7, it appears that "1200" should be changed to "1250" and "Figs. 12a and 12b" should be changed to "Fig. 12b".

On pg. 55 line 3, "720" should be changed to "1120".

Appropriate correction is required.

Claim Objections

15. Claim 1 is objected to because of the following informalities:

In claim 1 line 9, "to" should be inserted after "operable".

In claim 1 line 10, "a" should be deleted.

Appropriate correction is required.

Response to Arguments

16. Applicant's arguments filed 06/26/2006 have been fully considered but they are not persuasive.

Regarding the arguments on pg. 8-9, Examiner has cited an additional passage of Graviton (e.g., pg. 27 lines 16-17: "Such control may be effected at a purely local level, such as through the action of the processor 60 itself") showing the sensor assembly does generate control values. And examiner maintains that the previously cited passage (pg. 6 lines 19-29: "The actuator commands may be received via...another sensor assembly") teaches this feature as well.

The arguments on pg. 9-10 are generally moot since Examiner has cited additional passages teaching a set point. The inherency argument is now moot.

Applicant's arguments on pg. 13-14 are not persuasive. Examiner maintains that Graviton teaches memory on a substrate. See rejection above.

On page 15, Applicant argues that neither Graviton nor Yamazaki teach securing a battery to an integrated circuit. Firstly, it is noted that this feature is not claimed. Where do the claims recite securing a battery to an integrated circuit? Secondly, assuming for a moment that the instant claims did in fact recite this feature, Yamazaki does teach securing a battery to an integrated circuit. In Fig. 1 of Yamazaki, the batteries 16, 18, and 20 are secured to IC's 24, 26, and 28 via substrates 12 and 14.

Applicant's remaining arguments (e.g., pg. 17-21) have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

B. Warneke, M. Last, B. Leibowitz, and K.S.J. Pister. "Smart Dust: Communicating with a Cubic-Millimeter Computer". *IEEE Computer*, pages 44-

51, Jan 2001, hereinafter referred to as "Warneke et al.". Fig. 1 depicts an integrated circuit secured to a battery via a power capacitor.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan A. Jarrett whose telephone number is (571) 272-3742. The examiner can normally be reached on 10:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

19. In view of the appeal brief filed on 06/26/2006, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth above.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however,

the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

Ryan A. Jarrett
Examiner
Art Unit 2125

RAJ

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100